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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,527	02/07/2001	Hideo Morimoto	11A 3067	3179

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EXAMINER
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NGUYEN, CHANH DUY

ART UNIT	PAPER NUMBER
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2675

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DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/778,527

Applicant(s)

MORIMOTO ET AL

Examiner

Chanh Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,4 and 6 is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

The amendment filed on January 5, 2004 has been entered and considered by examiner.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman et al (U.S. Patent No. 6,437,772) in view of Shimada et al (U.S. Patent No. 6,051,853) and further in view of Ishihara et al (U.S. Patent No. 5,889,242).

As to claim 1, Zimmerman (e.g., Figure 7A) discloses a capacitance type sensor including a substrate (28), a group of fixed electrodes (30) provided on an upper face of the substrate (28), a movable electrode plate (60) having an electrode (62) on a lower flat face thereof), Zimmerman teaches a gap provided between the group of fixed electrodes (30) on the substrate (90) and the electrode (62) on the movable electrode (60) (see Figure 7a). Zimmerman teaches a movable electrode (60) having a rubber elasticity (see column 8, lines 31-32 and lines 44-50). Although Zimmerman only describes an articulating member (or movable electrode plate 59) on column 8, lines 31-32 and lines 44-50 being a resilient rubber member, but it is clear that the articulate member (60) of Figure 7A is also a resilient rubber member since both articulate members (59 and 60) in Figure 6 and 7A have the same structure .

Zimmerman does not mention at least a solder layer having thickness , in which the solder layer support the movable electrode plate. Shimada teaches a well-known feature of a solder layer (202) which supports the movable electrode (201); see Figure 12 and see column 9, lines 45-52. Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have provided a solder layer as taught by Shimada to the portion of the movable electrode plate (60) of Zimmerman so that it can be deformed by an external force; see column 9, lines 47-51 of Shimada.

Shimada teaches a solder layer which support the moveable electrode plate, but does not mention that the solder layer is conductive solder layer. However, Ishihara teaches a thin resilient metal sheet (38) which support the moveable electrode plate. The metal sheet (38) clearly is a conductive material (see column 8, lines 18-21).

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Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have provided a layer of conductive elastomer as taught by Ishihara to the movable electrode plate of Zimmerman as modified by Shimada so as to provide a smaller, thinner and lighter in weight of the multidirectional operating apparatus (see column 20, lines 48-54 of Ishihara).

As to dependent claim 3, this claim are met by Zimmerman and Shimada. For example, Zimmerman teaches the electrode ( 62) on the movable conductive rubber plate being made of a conductive rubber plate (see column 9, lines 57-64).

As to claim 5, Ishihara teaches a moveable electrode plate (50) connected to outer fixed contact (33) which is set at a ground voltage as the same was as applicant's disclosed device (i.e. movable electrode 21 being connected to contact L1, L2).

### ***Allowable Subject Matter***

4. Claims 2 , 4 and 6 are allowed.

### ***Response to Arguments***

5. Applicant's arguments filed January 5, 2004 have been fully considered but they are not persuasive.

On page 3, lines 19-25, applicant argues that Zimmerman does not show, suggest or teach the utilization of a conductive solder layer to support the movable electrode plate and provide a gap between the fixed electrodes on the substrate and the electrode on the movable electrode plate. However, the limitation "conductive

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solder" is taught by Shimada as well as Ishihara as set forth in the rejection and telephone interview on December 9, 2003.

On page 4, first paragraph, applicant argues that "solder is a word of art and is a metal alloy which is highly conductive and made of lead and tin and is well-known in the art as a highly electrically conductive material (see the attached copy from the Wikipedia which defines solder and also as it is described in and shown in the figures of applicants application)". However, Wikipedia dictionary provided by applicant as well as Wester's New World Dictionary provided by examiner have the same definition about solder. That is solders are metal alloy. Both Wikipedia dictionary and Wester's New World Dictionary do not define solder being highly conductive.

Applicant also argues that "the support 1250 may have any value of electric conductive as taught by Shimada" on col. 10, lines 52-54 does not mean that the support 1250 is a conductor and in fact could mean that the support 1250 is an insulator since electrical conductivity can be from low value to a very high value for insulators to conductors. Examiner would like to present his argument as followings: First of all, if the term conductive is defined as "from low value to a very high value" as applicant presented, then "any value of electric conductive" disclosed in Shimada is interpreted as high value. The term "any value" is not necessary to be a low value. Secondly, the term "preferably" in the passage "preferably that the support is made of insulator in order to suppress parasitic capacitance" described by Shimada is interpreted as desirable, but it is possible that the support is metal alloy beside the "preferably" insulator.

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On page 5, first paragraph, applicant argues that Ishihara does not suggest or teach a support or conductive support or a layer of conductive elastomer. First of all, the claim 1 does not recite the limitation a layer of conductive elastomer. Secondly, Shimada alone clearly teaches the limitation conductive solder layer as previously discussed above.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### **Inquiries**

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chanh Nguyen whose telephone number is (703) 308-6603.

If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Steven Saras can be reached at 305-9720.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306**

Hand-delivered responses should be brought to Crystal Park II, 2121  
Crystal Drive, Arlington, VA, Sixth Floor (Receptionist)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

*cn*

C. Nguyen  
March 16, 2004

*Chanh Nguyen*  
**CHANH NGUYEN**  
**PRIMARY EXAMINER**